

REMARKS

Claims 1-17 are all the claims pending in the application. Claims 1, 4, 9, and 11 have been amended to define more clearly the invention. Claims 7-8 and 13-17 have been withdrawn from consideration. Reconsideration and allowance of all claims are requested in view of the following remarks.

The Examiner has not yet indicated acceptance of the drawings filed December 14, 2001. Such indication is respectfully requested.

On November 24, 2003, the Applicant's Representative and Examiners Sang Kim and Kathy Matecki met at the U.S. Patent and Trademark Office to discuss the present application. The Applicant is most grateful for the Examiners' kindly granting such interview. No agreement was reached on the claims, but the art of record was discussed as noted in the relevant portions of the below remarks.

Rejections under 35 U.S.C. § 102

The Examiner rejected Claims 1-2, 4-5, 9, and 11 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,238,084 to Kataoka (hereafter referenced as '084).

A method and apparatus consistent with the present invention relate to a method and apparatus 10 for winding an elongate film or sheet of paper ("web") 24a, 24b neatly around a core 28a, 28b. The web 24a, 24b is initially wound around the core 28a, 28b under a low tension, thereafter being wound under a tension that increases at a given rate, and then being

wound under a tension that progressively decreases from the high tension. The web 24a, 24b thus wound into a roll is not damaged and the roll is in a neatly wound state free of edge undulations or irregularities on its end faces. (Page 42, line 21 through page 43, line 1.)

'084 discloses a control method adapted to wind a sheet under an ideal tensile taper (col. 1, lines 10-12). The winding is started from a radius at winding initiation, R_{min} , and the tension is gradually reduced down to a radius at winding termination, R_{max} (col. 1, lines 66-69, Fig. 1). '084 does not disclose winding the web to a given length around the core under a low tension, progressively *increasing* the tension until reaching a high tension, and thereafter winding the web under a tension which is being reduced from the high tension, as claimed in the present application. In fact, '084 does not even characterize the tension as anything *but* "decreasing"¹.

In the November 24 interview, the Examiner asserted that the Fig. 1 embodiment of '084 could possibly include a tension level at a dimension of winding smaller than the R_{min} depicted in Fig. 1. The Examiner then hypothesized that the tension level at that "pre-graph" dimension of winding could be lower than the T_0 shown, or could even be zero in the case of a slack attachment of the web to the spool. After careful study of '084, the Applicant simply cannot accept this interpretation of the '084 tension control. First, R_{min} is characterized in the text as

¹ Additionally, the Examiner points out, correctly, that the claims of the present application do not presently recite verbatim that the tension starts with the initial value lower than at the high tension. However, when a low tension is used initially and the tension is then progressively increased, the high (later) tension will inherently be higher than the low (earlier) tension. The Applicant gratefully acknowledges the Examiner's acceptance of the Applicant's point of view regarding this matter at the November 24 interview.

being “a radius at winding initiation” (col. 1, lines 66-67) and therefore ‘084 includes *no* indication of what the tension might be when the winding has not yet been initiated. One could readily imagine a situation in which the web is attached to the spool while being held under tension and the feed and winding tensions are controlled in precisely the manner depicted in Fig. 1, which situation would definitely not anticipate the present claims. In the complete lack of *any* teaching in ‘084 of the tension before the initiation of winding, the Applicant respectfully requests that ‘084 be removed as an anticipating reference to the claimed invention.

Finally, the Examiner states that the ‘084 device would still anticipate the claimed invention because the initial tension of ‘084 can be controlled based upon a theoretical equation. Be that as it may, the Examiner does not seem to have established that the tension during winding is progressively *increased* at a predetermined rate *from* that initial tension value, and therefore ‘084 does not and cannot anticipate the claims of the present application.

Claims 2 and 5 each depend upon one of Claims 1 and 4, and are patentable at least for the reasons set forth above based on this dependency as well as the recitations set forth therein. Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejection of Claims 1-2, 4-5, 9, and 11 under 35 U.S.C. § 102(b).

The Examiner rejected Claims 1-2 and 4-5 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,480,799 to Yano et al. (hereafter referenced as ‘799).

‘799 discloses a tension control apparatus for controlling tension applied to an electric wire being wound around a winding bobbin to form a perfect layer coil (col. 1, lines 10-14). The

winding machine of '799 differs greatly from the present invention because the present invention is operative to control tension on a web, while '799 is intended to wind a wire spirally about a bobbin. The wire has to "travel" longitudinally farther from the wire origin to get to the edges of the bobbin than to get to the middle of the bobbin due to the angle from the wire origin to different lateral points on the bobbin. This longitudinal distance difference will integrally effect tension of the wire, as previously pointed out to the Examiner and to which remarks he has not replied.

Moreover, '799 does *not* disclose winding of a *web*. Webster's Ninth New Collegiate Dictionary (1988) defines a "web" as, among similar meanings, "...a tissue or membrane...a thin metal sheet, plate, or strip...an intricate structure suggestive of something woven...a continuous sheet of paper...." All of these definitions have to do with a thin and flat item, with a width much greater than its thickness. In contrast, "wire" (as used in '799) is defined in the same volume as "...metal in the form of a very flexible thread or slender rod...a thread or rod of such material...." It is intuitively obvious that a wire--e.g., a thread or slender rod--is nonanalogous to a wide but flat web and that the handling properties of each would differ. For example, a wire would not be subject to wrinkling or bunching in a lateral direction as would a web. Therefore '799 does not anticipate the claimed invention.

According to the interpretation of Fig. 8(b) of '799 advanced by the Examiner in the personal interview of November 24, 2003, the portion of Fig. 8(b) between dashed lines A and D may be considered to fall under the present claim language regarding winding the web to a given

length around the core under a low tension, progressively increasing the tension until reaching a high tension, and thereafter winding the web under a tension which is being reduced from the high tension. Claims 1, 4, 9, and 11 have been amended to clarify the meaning of “thereafter” as meaning “until the web is in a completely wound state”. This change does not narrow the claims and simply makes explicit what was already implicit in the amended claims, so *Festo*-type estoppel does not apply. Support for the amendments of Claims 1, 4, 9, and 11 is found throughout the specification; for example, by reference to the higher winding tension command value T3 and all later tension values being “decreasing” or “lower” than T3, as depicted in Fig. 3 (line 10 of page 18 through line 19 of page 21). For at least the above reasons, ‘799 does not and cannot anticipate Claims 1-2 and 4-5 under 35 U.S.C. § 102(b).

Claims 2 and 5 each depend upon one of Claims 1 and 4 and are patentable at least for the reasons set forth above based on this dependency as well as the recitations set forth therein. Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejection of Claims 1-2 and 4-5 under 35 U.S.C. § 102(b).

Rejections under 35 U.S.C. § 103

The Examiner rejected Claims 3 and 6 under 35 U.S.C. § 103(a) as being unpatentable over ‘084 or ‘799. Claims 3 and 6 depend upon one of Claims 1 and 4 and are patentable at least for the reasons set forth above based on this dependency as well as the recitations set forth therein. Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejection of Claims 3 and 6 under 35 U.S.C. § 103(a).

Conclusion

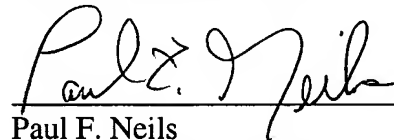
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Respectfully submitted,



Paul F. Neils
Registration No. 33,102
Liza J. Meyers
Registration No. 46,927

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